



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

oped. (6) That although the cartilaginous cranium (as that of the shark) becomes segmented in higher animals, that segmentation follows some law, which law may probably be found in a repetition in the skull of the manner in which, when the vertebral column becomes segmented, the lines of division pass through the middle of each protovertebra—thus their parachordals and trabeculæ would, by median division after the union, form three portions. (7) That of the median bones of the base of the skull, the pre-sphenoid, which is a *median* vertebral element formed by the *paired* trabecular cartilages, that theoretically ought not to form such an ossification, can only be explained by the law that “the longer a type endures in time the more perfectly is the vertebral plan of that type superimposed upon the skull.” (8) That the distinction of “membrane bones” and cartilage bones is not one of great importance, the former arising simply from the fact that the nervous substance of the brain “grows up so rapidly that the cartilage elements are unable to cover it.” (9) That the face originates in the jaws, which in elasmobranchs are separate from the skull. The jaws are developments of the mandibular cartilages, so that embryologically the lower jaw is the most important. The facial bones seem, as suggested by Balfour, to form two series, the inner consisting of vomer, palatine and pterygoid, the outer of maxillary, inter-maxillary and jugal. “It is quite possible that the six bones of the lower jaw, which in the lower vertebrates may be ranged into an outer and inner series of three each, correspond to the inner and outer bars of the palato-maxillary region? If the segmentation is not carried downwards from the brain-case, it is difficult to account for it.” Yet whatever explains the segmentation of the hyoid and branchial arches will also account for that of the face. Professor Seeley thinks it possible that the nasals, the labial cartilages of the elasmobranchs, are the basis of the nasals and premaxillaries.

Why any of these cartilages, including the branchial cartilages, should first come into existence as they do, without any obvious relation to skull structure, and yet finally become the framework of the skull is beyond the limits of knowledge, and the only key (here Professor Seeley exhibits Lamarckianism equal to that of some of our American naturalists) “is found in the law that function modifies, molds and originates structures, on the basis of antecedent organization.” Professor Seeley also lets fall the pregnant remark that many of the difficulties of comparative anatomy may possibly vanish when “embryology becomes the servant instead of the law-giver of morphology.”

GRAFF'S MONOGRAPH OF THE TURBELLARIANS.¹—The two volumes folio of text and plates (all from the author's own drawings) are devoted to the Rhabdocœlida, of which Professor Graff has

¹*Monographie der Turbellarien*. I. Rhabdocœlida. Dr. LUDWIG VON GRAFF. Leipzig, W. Englemann, 1882.

examined seventy species out of a hundred and sixty-eight that are certainly known. The author considers *Rhodope varanii* to be a nudibranch, and excepts the Microstomida and the Nemeritines from the Turbellaria. The former differ from other Turbellaria in having a complete peri-œsophageal nerve-ring, as well as in being diœcious, and in their power of multiplying by budding. Thus the Turbellaria consist only of the Rhabdocœlida and Dendrocœlida, the former of which Professor Graff divides into (1) Acœla, forms without nervous system, or excretory organs; as well as without a digestive tract and parenchym tissue, but with an otolith; (2) Rhabdocœla, with all the foregoing except (usually) the otolith, and (3) Alloiocœla.

THE ZOOLOGICAL RECORD FOR 1881.¹—This Record is about as bulky as its predecessors, in fact numbering thirty-six pages more than that for 1880, showing that the literature for 1881 was not less in extent than in previous years. The volume appears promptly, within a year from the close of the year recorded. The staff of recorders is eleven, not including the editor, Mr. Rye. It appears that the year 1881 was, as far as work on mammals is concerned, rather a dull one, no fresh, separate works of importance appearing, though there was no diminution in the number of papers. Ornithology made a better exhibit, as some important general works appeared. More room seems to be given in this volume than in some of its predecessors to abstracts of anatomical and embryological papers, and we hope that this method will be more extensively pursued hereafter, so that the Record will be useful not only to the systematist but to the general student of zoölogy. As it is, however, a work of this kind in the English language is simply invaluable. The student in any department, next to the scientific journals bearing on his specialty, needs a copy of this Record. It is almost a zoölogical library in itself, for it tells the student where to look for the papers in his specialty, thus saving him much valuable time, and preventing his doing over work which may already have been done by some one else.

The number of new genera and subgenera is 1438, as against 1008 of the Record for 1880.

THE GERMAN ZOOLOGICAL YEARLY RECORD.²—This Record, with the exception of the part on Vertebrates, promptly made its appearance the first of January. It is nearly twice as bulky as the English Record, and fuller abstracts are given of morphological and embryological papers and works, as well as the character of new genera. The list of recorders amounts to thirty-four. The general editor is Professor J. Victor Carus, assisted by Dr. P. Mayer.

¹ *The Zoölogical Record for 1881*; being volume eighteenth of the Record of Zoölogical Literature. Edited by E. C. RYE. London, John van Voorst, 1882. 8vo.

² *Zoölogischer Jahresbericht für 1881*. Herausgegeben von der Zoölogischen Station zu Neapel. Abtheilung i-iii. 1882. Leipzig, W. Englemann. 8vo.